



## **Project Announcement:**

# **IAGT: Winner of the 5<sup>th</sup> International Symposium on the Digital Earth (ISDE5) Grand Challenge Contest**

**May 2007**

**Integrating NASA Earth Observation Data  
into National Applications**

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## **Project Announcement: Integrating NASA Earth Observation Data into National Applications**

### **Project Overview**

SERVIR is a Regional Visualization and Monitoring System for Mesoamerica that intensively utilizes satellite imagery and other data sources for environmental management, monitoring, and natural disaster support in the region. The primary objective of this project is for IAGT to enhance the SERVIR decision support system, which is currently under development by NASA and other partners, with advanced 3D visualization and mapping tools to enable utilization of NASA and commercial remote sensing technology and data. IAGT also provides extensive outreach and training support to the SERVIR program regarding 3D geospatial visualization.

### **SERVIR Viz**

Based on previous experience using 3D visualization technologies to aid decision makers, IAGT was able to fast track development of a customized version of NASA's World Wind software in support of SERVIR. The result of this effort is SERVIR Viz, a free, open-source, 3D visualization tool for Mesoamerica. SERVIR Viz was developed as a gateway for the SERVIR project partners and participants to access web-enabled GIS maps, NASA imagery and other scientific data products relevant to the Mesoamerica region (a [complete list of NASA imagery/data](#) that can be accessed via SERVIR Viz can be found at the end of this document).

### **5th International Symposium on Digital Earth (ISDE5) and the Digital Earth Grand Challenge Contest**

Digital Earth is a visionary concept for the virtual and 3D representation of the Earth that is spatially referenced and interconnected with digital knowledge archives from around the planet, with vast amounts of scientific, natural, and cultural information to describe and understand the Earth, its systems, and human activities. Digital Earth sponsored the Grand Challenge contest, with the opportunity for international visibility of winning entries that promote innovative use of 3D visualization technologies.

A panel of internationally acclaimed judges evaluated the entries based on:

- Unique Attributes
- Innovation
- Usefulness
- Scalability
- Effective use of 3D perspectives
- Open source
- Ability to interoperate
- Transportability

IAGT entered SERVIR Viz in the contest, which was selected as a winner in this prestigious, international forum (*see press release – next section*).



# ANNOUNCEMENT

## IAGT Wins the 1<sup>st</sup> International Digital Earth Grand Challenge 3D Visualization Contest

*'SERVIR Viz' : IAGT's open-source, freely available, 3D Earth exploration tool part of ongoing effort to support NASA's SERVIR project in Central America.*

IAGT/Cayuga Community College, Auburn, NY, May 2007: The Institute for the Application of Geospatial Technology (IAGT) has been selected as a winner in the [International Digital Earth Grand Challenge 3D Visualization Contest](#). A panel of international judges selected IAGT's [SERVIR Viz](#) application from a global pool of 51 entries, representing every continent on earth (except Antarctica), underscoring IAGT's position as an innovative and leading provider of geospatially-enabled visualization technology solutions. IAGT will be recognized along with five other award winners, representing England, Denmark, Austria, and the United States, at an awards ceremony during the [5th International Symposium on Digital Earth \(ISDE5\)](#), at the University of California at Berkeley, on June 7<sup>th</sup>.

The work acknowledged by this award is the result of IAGT's efforts in Central America, providing enhanced mapping and 3D visualization capacity to seven countries: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama, which define a region referred to as Mesoamerica. The decision support system deployed by IAGT, called SERVIR Viz, provides access to, and visualization of satellite imagery and other geospatial data sources used for environmental management, monitoring, and natural disaster recovery in Mesoamerica.

Bob Brower, CEO of IAGT said, "I am so very proud of the IAGT staff and the work they have done on this project, particularly our employees Jessica Coughlin and Dan Deneau. The overwhelmingly positive response from project participants throughout Central America has been humbling and gratifying at the same time. I had the privilege of meeting and talking with many of them personally when we came together here last winter for a project workshop. To be recognized now by an international organization that is not a project participant is just a very wonderful occurrence. On a more practical level, it will also mean that the work of IAGT will be known to more people and that raises the potential to be in service to a larger community of NASA affiliates. We are so pleased to be a part of NASA's earth science enterprise initiatives. "

### Project Background:

The [SERVIR Project](#) is the result of an international collaboration effort that includes the Central American Commission on Environment and Development (CCAD), the Environmental Ministries of the Mesoamerican Countries, NASA, the Water Center for the Humid Tropics of Latin America and the Caribbean (CATHALAC), the United States Agency for International Development (USAID), the World Bank, and other partners. NASA and its partners strive to enable expanded use of earth science observations and predictive capabilities for managing the important natural resources of our planet. The enhanced visualization and mapping capacity



brought to this project by IAGT will assist policy makers, scientists, educators, international organizations, and the general public in understanding and addressing the complex and dynamic environmental and ecological issues in Mesoamerica. The end result of IAGT's efforts will help foster data analysis and information exchange throughout Mesoamerica in ways previously unavailable.

**Technical Background:**

[SERVIR Viz](#) is IAGT's open-source, web-enabled, freely available 3D earth exploration tool, which was developed to support the SERVIR program. SERVIR Viz, which utilizes NASA World Wind core technology, provides a visualization framework that provides users with customized data access functionality through the ability to view remotely-hosted geospatial data layers, maps, real-time satellite images, and other SERVIR products relevant to the Mesoamerica region.

**More Information:**

To find out more about IAGT's SERVIR project work, please visit: <http://www.iagt.org/servir> or contact Jessica Coughlin at: [jcoughlin@iagt.org](mailto:jcoughlin@iagt.org).

For more information about IAGT, please visit us at:

**[www.iagt.org](http://www.iagt.org)**



## NASA Data Available in SERVIR Viz 2.1

### Imagery

#### Blue Marble

Blue Marble

Blue Marble Next Generation

Blue Marble Next Generation (with Bathymetry)

#### Landsat Imagery

NLT Landsat7 (Visible Color, 30m)

I-Cubed ESAT World Landsat7 Mosaic (15m) – NASA derived, donated by I-Cube

OnEarth 15m Global Mosaic, pseudocolor

OnEarth 15m Global Mosaic, visual

NLT Landsat7 (Pseudo Color)

Geocover 2000 (Pseudo Color, 15m)

Geocover 1990 (Pseudo color 30m)

### SERVIR Framework

#### MODIS Imagery

MODIS daily terra

MODIS daily aqua

Hillshade SRTM 90

*LandScan 2003 Population*

*Fire Alerts*

*Flood Alerts*

Weather

IR Satellite

### GEOSS

#### Disasters

Hurricanes

GOES

Infrared

Visible

Water Vapor

GOES-12

Infrared

Fires

Aqua

1 Km

250 m

Terra

1 Km

250 m

#### Ecology

Observation/Prediction

Leaf Area Index (LAI)

Fraction of absorbed Photosynthetically Active Radiation (FPAR)



Gross Primary Production (GPP)  
Net Primary Production (NPP)  
Land Surface Temperature (LST-Daytime)  
Normalized Difference Vegetation Index (NDVI)  
Enhanced Vegetation Index (EVI)

**Weather**

Hurricanes  
Infrared  
Visible  
Water Vapor  
Current Conditions  
GOES  
Infrared  
Visible  
Water Vapor  
Daily Meteorological  
Maximum Temperature (TMAX)  
Minimum Temperature (TMIN)  
Rainfall (1d\_rain)  
Solar Radiation (SRAD)  
Vapor Pressure Deficit (VPD)

**NowCasting**

Convective Initiation  
Cloud Mask  
Nowcast Scores  
Temperature Trend

**Short Term Forecast**

Temperature and Wind  
10Km Domain  
30Km Domain  
Dewpoint Temp and Wind  
10Km Domain  
30Km Domain  
3 Hours Accumulated Precipitation  
10Km Domain  
30Km Domain  
950mb Wind and Pressure  
10Km Domain  
30Km Domain  
850mb Height, Temp and Wind  
10Km Domain  
30Km Domain  
700mb Humidity and Wind  
10Km Domain  
30Km Domain



500mb Vorticity and Wind  
10Km Domain  
30Km Domain

MM5 Forecast

Rain  
Dew Point and Wind  
Ground Temperature  
Vertical Velocity  
Humid Wind  
At 500mb  
At 700mb  
At 850mb  
Superficial Temperature  
At 2 meters  
At the Surface  
Pressure and Wind  
At 950mb  
At Surface

Accumulated Rainfall  
3 Hour Blended Accumulation

**Climate**

Climate Change  
Precipitation  
Sea Level Pressure  
2m Mixing Ratio  
Soil Moisture at Depth 10cm  
Soil Moisture at Depth 40cm  
Soil Moisture at Depth 100cm  
Soil Moisture at Depth 200cm  
2m Temperature  
Surface Temperature  
10m u Component of Wind  
10m v component of Wind  
Difference in Surface Temperature  
Difference in Precipitation

**Ocean/Marine Environments**

Red Tides  
Aqua Sea Surface Temperature  
Terra Sea Surface Temperature